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MENTAL ARITHMETIC,

UPON THE

INDUCTIVE PLAN;

FOR BEGINNERS.

By BENJAMIN GREENLEAF, A. M.,

AUTHOR OF THE "NATIONAL ARITHMETIC," ETC.

BOSTON:

ROBERT S. DAVIS, AND GOULD, KENDALL, & LINCOLN.

NEW YORK: Cowan, Harrison, & Co., AND G. & C. & H. Carvill.

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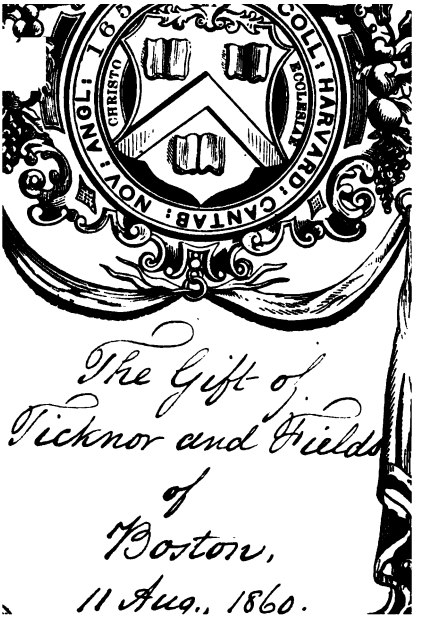

The Gift of
Ticknor and Fields
of
Boston,
11 Aug., 1860.

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Horace B. Perkins.

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And sold by the trade generally.

1849.

· additions.
though not so extensive as some works on the
yet believed, that the present treatise is suf
, previous to the use of the slate.
ıe object of this work is to furnish a regul
al Arithmetic, and an effort has been made t
, that are simple and easy to be understood, a
ore difficult ones no faster, than the pupil is s
ıred to understand and solve them.
ould this little treatise receive as much favor
the other works of the author, he will feel h
ensated for his labor in the elementary depa
essential branch of common education.

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MENTAL ARITHMETIC.

SECTION I.

1. John had two cents, and James gave him another; how many cents then had John?

Two and one are how many?

2. Samuel had two nuts, and John gave him two more; how many nuts then had Samuel?

Two and two are how many?

3. Thomas gave two biscuits to a poor man, and James gave him three; how many biscuits then had the poor man?

Three and two are how many?

4. One boy has five sheets of paper, and another boy has four sheets; how many have both?

Five and four are how many?

5. John had five cents, and some person gave him two more; how many did he then have?

Five and two are how many?

6. John had six cents, and Luke gave him two more; how many did he then have?

Six and two are how many?

7. A merchant bought at one time four barrels of flour, and at another time he bought five barrels; how many did he then have?

Four and five are how many?

8. Sold at one time eight pounds of sugar, and at another time, one pound; how many pounds did I sell?

Eight and one are how many?

9. Gave seven cents for oranges, and three cents for figs; what was paid for both?

Seven and three are how many?

How many are five and two?

2. Gave four dollars for a coat, and tv
est; what was given for both?

How many are four and two?

3. John had six dollars, and Luke g
re; how many dollars then had John?

How many are six and two?

4. Gave seven dollars for a load of w
lar for a bushel of corn; what was giv

How many are seven and one?

5. Sold a quantity of fruit for eight
eived two dollars for a keg of molasse
eived for both?

How many are eight and two?

6. Paid Johnson seven dollars for a
l Kimball three dollars for salt; how
e paid for the hay and salt?

How many are seven and three?

7. Paid Howe eight dollars for broadc
lar for an axe; what was the sum paid

How many are eight and one?

8. Gave seven dollars to the Benev
l four dollars to the Temperance Societ

SECTION II.

The following table will exhibit the manner in which numbers are written in Arabic and Roman characters.

	Printed Arabic Figures.	Written Figures.	Roman.
One is written	1		I.
Two is written	2		II.
Three,	3		III.
Four,	4		IV.
Five,	5		V.
Six,	6		VI.
Seven,	7		VII.
Eight,	8		VIII.
Nine,	9		IX.
Ten,	10		X.
Eleven,	11		XI.
Twelve,	12		XII.
Thirteen,	13		XIII.
Fourteen,	14		XIV.
Fifteen,	15		XV.
Sixteen,	16		XVI.
Seventeen,	17		XVII.
Eighteen,	18		XVIII.
Nineteen,	19		XIX.
Twenty,	20		XX.

ıty-five,	25	25	
ıty-six,	26	26	
ıty-seven,	27	27	
ty-eight,	28	28	
ty-nine,	29	29	
y,	30	30	
y-one, &c.	31	31	
,	40	40	
-one, &c.	41	41	
	50	50	
ɔne, &c.	51	60	
	60	51	]
one, &c.	61	61	I
y,	70	70	I
y-one, &c.	71	71	I
; '	80	80	I

SECTION III.

Addition Table.

2	and	0	are	2	3	and	0	are	3	4	and	0	are	4
2	and	1	are	3	3	and	1	are	4	4	and	1	are	5
2	and	2	are	4	3	and	2	are	5	4	and	2	are	6
2	and	3	are	5	3	and	3	are	6	4	and	3	are	7
2	and	4	are	6	3	and	4	are	7	4	and	4	are	8
2	and	5	are	7	3	and	5	are	8	4	and	5	are	9
2	and	6	are	8	3	and	6	are	9	4	and	6	are	10
2	and	7	are	9	3	and	7	are	10	4	and	7	are	11
2	and	8	are	10	3	and	8	are	11	4	and	8	are	12
2	and	9	are	11	3	and	9	are	12	4	and	9	are	13
2	and	10	are	12	3	and	10	are	13	4	and	10	are	14
2	and	11	are	13	3	and	11	are	14	4	and	11	are	15
2	and	12	are	14	3	and	12	are	15	4	and	12	are	16
5	and	0	are	5	6	and	0	are	6	7	and	0	are	7
5	and	1	are	6	6	and	1	are	7	7	and	1	are	8
5	and	2	are	7	6	and	2	are	8	7	and	2	are	9
5	and	3	are	8	6	and	3	are	9	7	and	3	are	10
5	and	4	are	9	6	and	4	are	10	7	and	4	are	11
5	and	5	are	10	6	and	5	are	11	7	and	5	are	12
5	and	6	are	11	6	and	6	are	12	7	and	6	are	13
5	and	7	are	12	6	and	7	are	13	7	and	7	are	14
5	and	8	are	13	6	and	8	are	14	7	and	8	are	15
5	and	9	are	14	6	and	9	are	15	7	and	9	are	16
5	and	10	are	15	6	and	10	are	16	7	and	10	are	17
5	and	11	are	16	6	and	11	are	17	7	and	11	are	18
5	and	12	are	17	6	and	12	are	18	7	and	12	are	19
8	and	0	are	8	8	and	5	are	13	8	and	10	are	18
8	and	1	are	9	8	and	6	are	14	8	and	11	are	19
8	and	2	are	10	8	and	7	are	15	8	and	12	are	20
8	and	3	are	11	8	and	8	are	16	8	and	13	are	21
8	and	4	are	12	8	and	9	are	17	8	and	14	are	22

and	4	are	13	10	and	5	are	15	11		
and	5	are	14	10	and	6	are	16	11		
and	6	are	15	10	and	7	are	17	11		
and	7	are	16	10	and	8	are	18	11		
and	8	are	17	10	and	9	are	19	11		
and	9	are	18	10	and	10	are	20	11		
and	10	are	19	10	and	11	are	21	11		
and	11	are	20	10	and	12	are	22	11		
and	12	are	21								

12	and	0	are	12	12	and	5	are	17	12	
12	and	1	are	13	12	and	6	are	18	1	
12	and	2	are	14	12	and	7	are	19	1	
12	and	3	are	15	12	and	8	are	20	1	
12	and	4	are	16	12	and	9	are	21	1	

SECTION IV.

1. 1 and 1 are how many?
2. 1 and 3 are how many?
3. 1 and 5 are how many?
4. 1 and 7 are how many?
5. 1 and 9 are how many?

15. 2 and 7 are how many?
16. 2 and 9 are how many?
17. 2 and 11 are how many?
18. 2 and 2 are how many?
19. 2 and 4 are how many?
20. 2 and 6 are how many?
21. 2 and 8 are how many?
22. 2 and 10 are how many?
23. 3 and 1 are how many?
24. 3 and 3 are how many?
25. 3 and 5 are how many?
26. 3 and 7 are how many?
27. 3 and 9 are how many?
28. 3 and 11 are how many?
29. 3 and 2 are how many?
30. 3 and 4 are how many?
31. 3 and 6 are how many?
32. 3 and 8 are how many?
33. 3 and 10 are how many?
34. 4 and 1 are how many?
35. 4 and 3 are how many?
36. 4 and 5 are how many?
37. 4 and 7 are how many?
38. 4 and 9 are how many?
39. 4 and 2 are how many?
40. 4 and 4 are how many?
41. 4 and 6 are how many?
42. 4 and 8 are how many?
43. 4 and 10 are how many?
44. 5 and 1 are how many?
45. 5 and 3 are how many?
46. 5 and 5 are how many?
47. 5 and 7 are how many?
48. 5 and 9 are how many?
49. 5 and 2 are how many?
50. 5 and 4 are how many?
51. 5 and 6 are how many?

57. 6 and 7 are how many?
58. 6 and 9 are how many?
59. 6 and 2 are how many?
60. 6 and 4 are how many?
61. 6 and 6 are how many?
62. 6 and 8 are how many?
63. 6 and 10 are how many?
64. 7 and 1 are how many?
65. 7 and 3 are how many?
66. 7 and 5 are how many?
67. 7 and 7 are how many?
68. 7 and 9 are how many?
69. 7 and 2 are how many?
70. 7 and 4 are how many?
71. 7 and 6 are how many?
72. 7 and 8 are how many?
73. 7 and 10 are how many?
74. 8 and 1 are how many?
75. 8 and 3 are how many?
76. 8 and 5 are how many?
77. 8 and 7 are how many?
78. 8 and 9 are how many?
79. 8 and 2 are how many?
80. 8 and 4 are how many?
81. 8 and 6 are how many?

89. 9 and 2 are how many?
90. 9 and 4 are how many?
91. 9 and 6 are how many?
92. 9 and 8 are how many?
93. 9 and 10 are how many?
94. 10 and 1 are how many?
95. 10 and 3 are how many?
96. 10 and 5 are how many?
97. 10 and 7 are how many?
98. 10 and 9 are how many?
99. 10 and 2 are how many?
100. 10 and 4 are how many?
101. 10 and 6 are how many?
102. 10 and 8 are how many?
103. 10 and 10 are how many?

SECTION V.

1. Gave 3 cents to James, 4 cents to Thomas, and 2 cents to Jane; how many cents did they all receive?

2. Gave 7 nuts to one boy, 4 nuts to another, and 7 nuts to another; how many nuts were given to the three boys?

3. John has 3 marbles, Samuel has 5 marbles, and Jacob has 4 marbles; how many marbles have they all? How many has Samuel more than John?

4. Jane has 9 cents, Mary 8 cents, and Lydia 7 cents; how many cents have they all? How many more cents has Jane than Lydia?

5. Bought a horse for 20 dollars, and paid at one time 5 dollars, and at another time 8 dollars; how many dollars remain due?

6. Gave 12 cents for a Testament, 10 cents for paper, and 8 cents for an inkstand; what did I pay for the whole?

7. A man sets out from Bradford to travel to Bo-

cents; what was the whole cost?

9. John had 20 marbles; he gave 3 to Luke, and 5 to Matthew; how ma

10. A lady bought some pins for thread for 11 cents, some riband for 6 c cotton for 9 cents; what was the cost ticles?

11. Bought a barrel of flour for 6 rel of apples for 3 dollars, and a keg c 3 dollars; what was the cost of the wh

12. John gave 3 cents for paper, a quills; what did he give for both?

13. Hannah paid 4 cents for candy, cherries; what did she pay for both?

14. Gave 6 nuts to James, and 4 n how many did both receive?

15. If I pay 6 dollars for a barrel 3 dollars for a good cheese, what is the

16. A boy gave to one of his peaches; to another 6; and to another did he give them all?

17. James had 5 pears, and his bro 4 more; how many pears then had Jam

18. If your father give you 10 cent

21. Frank put 4 cents into his money-box the first week, 6 cents the second week, and 9 cents the third week; how many cents were in the box at the end of three weeks?

22. If a man give 6 dollars for a sleigh, 3 dollars for a harness, and 5 dollars for a saddle, how much would he give for all?

23. A lady bought some silk for 7 dollars, a muff for 4 dollars, a pair of gloves for 1 dollar, a shawl for 10 dollars, and a bonnet for 6 dollars; how many dollars did she pay away?

24. James is 4 years old, Edward 6, Charles 8, and Ann 10 years old; what is the sum of their ages?

25. A man bought a horse for 12 dollars, a cow for 9 dollars, a sheep for 5 dollars, and a pig for 2 dollars; what was the whole cost?

SECTION VI.

1. A man bought a cow for 20 dollars, a load of wood for 5 dollars, and a spade for 1 dollar; what was the cost of the whole?

2. A lady purchased some silk for 25 dollars, and a shawl for 5 dollars; what did she give for both?

3. Bought 30 bales of cotton, 6 bags of rice, and 2 boxes of sugar; what was the number of articles purchased?

4. A gentleman gave 46 dollars for a watch, 7 dollars for a chain, and 2 dollars for a key; what did he pay for the whole?

5. If a horse is worth 50 dollars, a saddle 9 dollars, and a whip 1 dollar, what is the value of the whole?

6. Gave 75 dollars for a chaise, 6 dollars for a harness, and 2 dollars for a buffalo-robe; what did the whole cost?

how many did he sell in all?

9. New York has 57 counties, D
Rhode Island 3; how many have th

10. A man gave 64 dollars for
cost him 10 dollars to fence it, and
ploughed; what was the whole cost

11. Three men engage in trade
100 dollars, the second 20, and th
how much did they all put in?

12. Charles gave 75 cents for
cents for a Grammar, 8 cents for a
2 cents for a pencil; what did he gi

13. Edward bought a vest for
tons for 12 cents, and some thread
was the whole cost?

14. How many are 4 and 6 and
4 and 8 and 5? 4 and 9 and 3?
4 and 4 and 9? 4 and 6 and 8?

15. How many are 4 and 5 an
6? 3 and 8 and 8? 4 and 9 an
9? 5 and 5 and 4? 5 and 4 and 7

16. How many are 7 and 1 an
5? 6 and 1 and 9? 6 and 3 an
4? 7 and 7 and 4? 7 and 8 an

SECTION VII.

Subtraction Table.

1	from	1	leaves	0	2	from	2	leaves	0	3	from	3	leaves	0
1	from	2	leaves	1	2	from	3	leaves	1	3	from	4	leaves	1
1	from	3	leaves	2	2	from	4	leaves	2	3	from	5	leaves	2
1	from	4	leaves	3	2	from	5	leaves	3	3	from	6	leaves	3
1	from	5	leaves	4	2	from	6	leaves	4	3	from	7	leaves	4
1	from	6	leaves	5	2	from	7	leaves	5	3	from	8	leaves	5
1	from	7	leaves	6	2	from	8	leaves	6	3	from	9	leaves	6
1	from	8	leaves	7	2	from	9	leaves	7	3	from	10	leaves	7
1	from	9	leaves	8	2	from	10	leaves	8	3	from	11	leaves	8
1	from	10	leaves	9	2	from	11	leaves	9	3	from	12	leaves	9
1	from	11	leaves	10	2	from	12	leaves	10	3	from	13	leaves	10
1	from	12	leaves	11	2	from	13	leaves	11	3	from	14	leaves	11
1	from	13	leaves	12	2	from	14	leaves	12	3	from	15	leaves	12
4	from	4	leaves	0	5	from	5	leaves	0	6	from	6	leaves	0
4	from	5	leaves	1	5	from	6	leaves	1	6	from	7	leaves	1
4	from	6	leaves	2	5	from	7	leaves	2	6	from	8	leaves	2
4	from	7	leaves	3	5	from	8	leaves	3	6	from	9	leaves	3
4	from	8	leaves	4	5	from	9	leaves	4	6	from	10	leaves	4
4	from	9	leaves	5	5	from	10	leaves	5	6	from	11	leaves	5
4	from	10	leaves	6	5	from	11	leaves	6	6	from	12	leaves	6
4	from	11	leaves	7	5	from	12	leaves	7	6	from	13	leaves	7
4	from	12	leaves	8	5	from	13	leaves	8	6	from	14	leaves	8
4	from	13	leaves	9	5	from	14	leaves	9	6	from	15	leaves	9
4	from	14	leaves	10	5	from	15	leaves	10	6	from	16	leaves	10
4	from	15	leaves	11	5	from	16	leaves	11	6	from	17	leaves	11
4	from	16	leaves	12	5	from	17	leaves	12	6	from	18	leaves	12
7	from	7	leaves	0	7	from	12	leaves	5	7	from	17	leaves	10
7	from	8	leaves	1	7	from	13	leaves	6	7	from	18	leaves	11
7	from	9	leaves	2	7	from	14	leaves	7	7	from	19	leaves	12
7	from	10	leaves	3	7	from	15	leaves	8	7	from	20	leaves	13
7	from	11	leaves	4	7	from	16	leaves	9	7	from	21	leaves	14

8 from 14 leaves 6
8 from 15 leaves 7
8 from 16 leaves 8
8 from 17 leaves 9
8 from 18 leaves 10
8 from 19 leaves 11
8 from 20 leaves 12

11 from 11 leaves 0
11 from 12 leaves 1
11 from 13 leaves 2
11 from 14 leaves 3
11 from 15 leaves 4
11 from 16 leaves 5
11 from 17 leaves 6
11 from 18 leaves 7
11 from 19 leaves 8

9 from 15 leaves 6
9 from 16 leaves 7
9 from 17 leaves 8
9 from 18 leaves 9
9 from 19 leaves 10
9 from 20 leaves 11
9 from 21 leaves 12

11 from 20 leaves 9
11 from 21 leaves 10
11 from 22 leaves 11
11 from 23 leaves 12

12 from 12 leaves 0
12 from 13 leaves 1
12 from 14 leaves 2
12 from 15 leaves 3

SECTION VII

1. A boy has three nuts in his nuts in his left hand; how many right hand than in his left? How n

4. Gave 6 cents for a book, and 3 cents for plums; how much more was given for the book than the plums? What was the cost of both?

5. John gave 8 cents for a writing-book, and two cents for a ruler; what was the cost of both? How much more was given for the book than the ruler?

6. Samuel had 8 cents, and he gave 6 of them to his brother; how many had he left?

7. Thomas had 10 dollars; he lost five dollars; how many had he left?

8. If you had 7 cents in one hand and 4 in the other, how many more would you have in one hand than in the other? How many in both?

9. Paid 8 dollars for a hundred-weight of sugar, and 3 dollars for a cheese; how much more did the sugar cost than the cheese? What was the cost of both?

10. A butcher has 7 sheep and 6 lambs; how many more sheep has he than lambs? How many of both?

11. Gave 9 cents for cherries, and two cents for apples; how much more was given for the cherries than for the apples? What was the cost of both?

12. Received 10 dollars for a quantity of wheat, but having lost 4 dollars, how many remain?

13. Gave 7 dollars to the Benevolent Society, and 5 dollars to the Seamen's Aid Society; how much was given to both societies? How much more was given to the former than the latter?

14. Paid 6 dollars for a pair of boots, and 2 dollars for a pair of shoes; how much more was paid for the boots than the shoes? What was paid for both?

SECTION IX.

1. Gave 3 cents for an orange, and 2 cents for an

any more has Samuel than Thomas?

4. Sold a quantity of sugar for 7 d
ived in payment a barrel of flour at 5
any dollars remain due?

5. Gave 10 dollars for a load of hay
r a cow; how much more was give
an for the cow? What was the cost o

6. Paid 7 dollars for a plank, and 2
xe; how much more was paid for the
he axe? What was the cost of both?

7. Gave 7 dollars for a pair of boots,
for a hat; how much more did the boot
hat? How much was given for both?

8. Sold a horse for 10 dollars, and re
ment two yards of broadcloth at 2 d
how much remains due?

9. Gave 12 cents for a top, and 3
bles; how much more was paid for t
he marbles? How much was paid for

10. Bought a quantity of sugar for
old it for 12 dollars; what did I gain?

11. Bought a barrel of flour for 7 d
t for 4 dollars; what did I lose?

had borrowed 12 cents

16. James has 13 marbles; if he lose 5 of them, how many will he have left?

17. John found 13 cents, and Samuel found 8 cents; how many more cents did John find than Samuel?

18. John Smith agreed to labor for me fifteen days; but, having left me at the end of 8 days, how many days' labor remains due me?

19. Samuel Smith owed me 20 dollars; he gave me a ten dollar bill; how many dollars remain due?

20. Gave 11 dollars to Emily, and 7 dollars to Betsey; how many more dollars were given to Emily than to Betsey? How many dollars were given to both?

21. Gave Lydia 17 dollars, and she lost 8 dollars; how many had she left?

22. Paid 20 cents for a penknife, and 12 cents for an inkstand; how much more did the penknife cost than the inkstand? What was the cost of both?

23. Gave 10 cents for apples, and 12 cents for peaches; what was the cost of both; and how much more was given for the peaches than the apples?

24. John is 17 years old, and Sally is 9 years old; what is the difference of their ages? What is the sum of their ages?

SECTION X.

1. James recites 12 perfect lessons in a week, and John only 4; how many more does James recite than John? 4 from 12 leaves how many?

2. Lucy put 13 chestnuts into the embers to roast, but 5 of them were burned up; how many were saved? 13 less 5 are how many?

3. Rufus reads 14 pages every day, but Frank reads only 7; how many more does Rufus read than Frank? 14 less 7 are how many?

Augustus had 24 apples; he gave
ompanions, 8 to another, and 5 to an
had he left?

Sarah had 20 cherries; she gave 4
ne, and 5 to Frank; how many had sl

Two men start from Boston, and trav
; one travels at the rate of 3 miles a
at the rate of 5 miles an hour; how f
at the end of one hour? How far at
irs? 4 hours? 6 hours? 8 hours?

Two men, A and B, start from L
l the same way; A travels at the rate
ur, and B at the rate of 9 miles an l
part will they be at the end of one ho
t the end of 2 hours? 4 hours? 6
?

Six less two are how many?
Five less four are how many?
Three less two are how many?
Seven less three are how many?
Nine less four are how many?
Six less one are how many?
Four less four are how many?
Eight less five are how many?

24. Eleven less seven are how many?
25. Fifteen less eight are how many?
26. Thirteen less six are how many?
27. Sixteen less ten are how many?
28. Fourteen less nine are how many?
29. Seventeen less six are how many?
30. Fifteen less eight are how many?
31. Eighteen less four are how many?
32. Sixteen less twelve are how many?
33. Nineteen less eleven are how many?
34. Fourteen less six are how many?
35. Eleven less four are how many?
36. Sixteen less nine are how many?
37. Nineteen less five are how many?
38. Fifteen less seven are how many?
39. Seventeen less four are how many?
40. Eighteen less eight are how many?
41. Twenty less nine are how many?

SECTION XI.

Multiplication Table.

2	times	0	are	0	3	times	0	are	0	4	times	0	are	0
2	times	1	are	2	3	times	1	are	3	4	times	1	are	4
2	times	2	are	4	3	times	2	are	6	4	times	2	are	8
2	times	3	are	6	3	times	3	are	9	4	times	3	are	12
2	times	4	are	8	3	times	4	are	12	4	times	4	are	16
2	times	5	are	10	3	times	5	are	15	4	times	5	are	20
2	times	6	are	12	3	times	6	are	18	4	times	6	are	24
2	times	7	are	14	3	times	7	are	21	4	times	7	are	28
2	times	8	are	16	3	times	8	are	24	4	times	8	are	32
2	times	9	are	18	3	times	9	are	27	4	times	9	are	36
2	times	10	are	20	3	times	10	are	30	4	times	10	are	40
2	times	11	are	22	3	times	11	are	33	4	times	11	are	44
2	times	12	are	24	3	times	12	are	36	4	times	12	are	48

5	times	6	are	30	6	times	6	are	36	7	ti
5	times	7	are	35	6	times	7	are	42	7	ti
5	times	8	are	40	6	times	8	are	48	7	ti
5	times	9	are	45	6	times	9	are	54	7	ti
5	times	10	are	50	6	times	10	are	60	7	ti
5	times	11	are	55	6	times	11	are	66	7	ti
5	times	12	are	60	6	times	12	are	72	7	ti
8	times	0	are	0	9	times	0	are	0	10	t
8	times	1	are	8	9	times	1	are	9	10	t
8	times	2	are	16	9	times	2	are	18	10	t
8	times	3	are	24	9	times	3	are	27	10	t
8	times	4	are	32	9	times	4	are	36	10	t
8	times	5	are	40	9	times	5	are	45	10	t
8	times	6	are	48	9	times	6	are	54	10	t
8	times	7	are	56	9	times	7	are	63	10	t
8	times	8	are	64	9	times	8	are	72	10	t
8	times	9	are	72	9	times	9	are	81	10	t
8	times	10	are	80	9	times	10	are	90	10	t
8	times	11	are	88	9	times	11	are	99	10	t
8	times	12	are	96	9	times	12	are	108	10	t

SECTION XII.

1. What cost 3 apples, at 2 cents apiece? If one apple cost 2 cents, 3 apples will cost 3 times as much; and 3 times 2 cents are 6 cents.

2. What cost 4 oranges, at 2 cents apiece?

3. What cost 5 bushels of corn, at 2 dollars a bushel? What cost 7 bushels? 9 bushels?

4. If one barrel of flour cost 4 dollars, what cost 2 barrels? 4 barrels? 5 barrels? 6 barrels?

5. What cost 3 barrels of apples, at 3 dollars a barrel? What cost 6 barrels? 9 barrels?

6. What cost 4 quinces, at 3 cents apiece?

7. What cost 3 bushels of oats, at 4 shillings a bushel? At 5 shillings? At 6 shillings?

8. What cost 4 pounds of rice, at 3 cents a pound?

9. If one pound of raisins cost 5 cents, what cost 4 pounds? What cost 7 pounds? 9 pounds?

10. If one pound of currants cost 6 cents, what cost 2 pounds? 3 pounds? 4 pounds? 6 pounds?

11. If one pound of sugar cost 6 cents, what cost 3 pounds? 4 pounds? 6 pounds? 8 pounds?

12. What cost 5 quarts of molasses, at 4 cents a quart? What cost 7 quarts? 9 quarts?

13. What cost 6 gallons of vinegar, at 3 shillings a gallon? 7 gallons? 9 gallons? 11 gallons?

14. If one quart of cherries cost 5 cents, what cost 5 quarts? 7 quarts? 8 quarts? 9 quarts?

15. What cost 7 pounds of nutmegs, at 2 shillings a pound? At 3 shillings a pound?

16. When 5 dollars are paid for a barrel of flour, what is the cost of 3 barrels? of 7 barrels?

17. When 6 dollars are paid for a cord of wood, what must be given for 4 cords? For 7 cords?

18. What is the cost of 8 barrels of flour, at 5 dollars a barrel? At 7 dollars a barrel?

21. What cost 6 bushels of grape
bushel?

22. When 5 dollars are paid for on
land, what must be given for 5 square

23. What cost 2 pounds of sugar
pound?

24. What cost 4 pounds of raisins
pound?

25. If 5 cents are paid for a loaf
must be paid for 6 loaves?

26. When 5 bushels of apples are p
of flour, how many bushels must be pa
of flour?

27. When 8 cents are paid for a
bread, how much must be given for 4 s

28. If one dollar is paid for 2 gal
much must be paid for 8 gallons?

29. When 9 dollars will buy a lo
will 3 loads cost?

30. What is the value of 8 bushels
at 5 dollars a bushel?

31. What cost 5 yards of cloth, at 5

32. What cost 3 barrels of molasses,
a barrel? What cost 4 barrels? 6 h

37. Harry sold 8 peaches, at 9 cents apiece; what did he receive?

SECTION XIII.

1. What cost 2 bushels of apples, at 2 dollars a bushel? If one bushel cost 2 dollars, 2 bushels will cost two times as much; and 2 times 2 dollars are 4 dollars.

2. What cost 3 pecks of quinces, at 2 shillings a peck? At 3 shillings? At 4 shillings? At 5 shillings?

3. John gave 2 cents apiece for 3 apples; how much did they cost?

4. Bought 5 lemons for 2 cents apiece; what was the cost?

5. What cost 4 yards of riband, at 2 cents a yard?

6. What cost 5 barrels of apples, at 2 dollars a barrel? What cost 6 barrels? What cost 7 barrels?

7. What must be given for 3 rolls of candy, at 3 cents a roll? At 4 cents? At 6 cents? At 8 cents?

8. What must be given for 4 bushels of rye, at 2 dollars a bushel? 6 bushels? 8 bushels? 12 bushels?

9. What cost 3 bushels of wheat, at 2 dollars a bushel? 4 bushels? 6 bushels? 7 bushels? 9 bushels?

10. What cost 3 pounds of coffee, at 7 cents a pound? What cost 5 pounds? 7 pounds? 8 pounds? 9 pounds? 10 pounds? 11 pounds? 12 pounds?

11. What cost 3 yards of riband, at 3 cents a yard? What cost 5 yards? 6 yards? 7 yards? 8 yards?

12. If one pound of beef cost 7 cents, what cost 3 pounds? 4 pounds? 5 pounds? 6 pounds? 7 pounds?

13. If one bushel of apples cost 3 shillings, what cost 3 bushels? 8 bushels? 9 bushels? 10 bushels? 12 bushels?

14. If one pound of raisins cost 4 cents, what cost 3 pounds? 4 pounds? 5 pounds? 12 pounds? 9 pounds? 8 pounds? 7 pounds? 6 pounds? 10 pounds?

7 tons? 8 tons? 9 tons? 10 ton

17. Paid 7 cents for one quart 2 quarts? 3 quarts? 4 quarts? 5 7 quarts? 8 quarts? 9 quarts?

18. When good sugar is sold f what must be paid for 2 pounds pounds? 5 pounds? 6 pounds? 7 p 9 pounds? 10 pounds? 11 pounds

19. F. Johnson sells good coffee a what must I pay him for 2 pound pounds? 5 pounds? 6 pounds pounds? 9 pounds? 10 pounds?

20. A good horse will travel 10 r how far will he travel in 3 hours? hours? 6 hours? 7 hours? 8 10 hours? 11 hours? 12 hours?

21. If four farthings make one farthings are there in 4 pence? 5 p pence? 9 pence? 10 pence? 11 pe

22. In one shilling there are 12 pence in 2 shillings? 3 shillings? shillings? 6 shillings? 7 shillings

23. In one week there are 7 days in 2 weeks? 3 weeks? 4 week

3. Two times six are how many?
4. Six times four are how many?
5. Five times seven are how many?
6. Eight times three are how many?
7. Five times eight are how many?
8. Four times nine are how many?
9. Nine times three are how many?
10. Seven times six are how many?
11. Six times eight are how many?
12. Three times nine are how many?
13. Five times ten are how many?
14. Eight times nine are how many?
15. Four times four are how many?
16. Seven times five are how many?
17. Nine times seven are how many?
18. Six times six are how many?
19. Two times twelve are how many?
20. Three times eleven are how many?
21. Four times ten are how many?
22. Ten times five are how many?
23. Six times ten are how many?
24. Four times twelve are how many?
25. Seven times twelve are how many?
26. Twelve times five are how many?
27. Twelve times three are how many?
28. Five times eleven are how many?
29. Eleven times six are how many?
30. Nine times nine are how many?
31. Eleven times eleven are how many?
32. Ten times ten are how many?
33. Twelve times seven are how many?
34. Twelve times ten are how many?
35. Seven times twelve are how many?
36. Seven times eleven are how many?
37. Six times twelve are how many?
38. Seven times seven are how many?
39. Twelve times twelve are how many?

a	4,	2	times	3	in	6,	2	times	4	in
a	6,	3	times	3	in	9,	3	times	4	in
a	8,	4	times	3	in	12,	4	times	4	in
a	10,	5	times	3	in	15,	5	times	4	in
a	12,	6	times	3	in	18,	6	times	4	in
a	14,	7	times	3	in	21,	7	times	4	in
a	16,	8	times	3	in	24,	8	times	4	in
a	18,	9	times	3	in	27,	9	times	4	in
a	20,	10	times	3	in	30,	10	times	4	in
a	22,	11	times	3	in	33,	11	times	4	in
a	24,	12	times	3	in	36,	12	times	4	in
a	5,	1	time	6	in	6,	1	time	7	in
a	10,	2	times	6	in	12,	2	times	7	in
a	15,	3	times	6	in	18,	3	times	7	in
a	20,	4	times	6	in	24,	4	times	7	in
a	25,	5	times	6	in	30,	5	times	7	in
a	30,	6	times	6	in	36,	6	times	7	in
a	35,	7	times	6	in	42,	7	times	7	in
a	40,	8	times	6	in	48,	8	times	7	in
a	45,	9	times	6	in	54,	9	times	7	in
a	50,	10	times	6	in	60,	10	times	7	in
a	55,	11	times	6	in	66,	11	times	7	in
a	60,	12	times	6	in	72,	12	times	7	in

9	in	63,	7	times	10	in	90,	9	times	11	in	121,	11	times
9	in	72,	8	times	10	in	100,	10	times	11	in	132,	12	times
9	in	81,	9	times	10	in	110,	11	times					
9	in	90,	10	times	10	in	120,	12	times	12	in	12,	1	time
9	in	99,	11	times						12	in	24,	2	times
9	in	108,	12	times	11	in	11,	1	time	12	in	36,	3	times
					11	in	22,	2	times	12	in	48,	4	times
10	in	10,	1	time	11	in	33,	3	times	12	in	60,	5	times
10	in	20,	2	times	11	in	44,	4	times	12	in	72,	6	times
10	in	30,	3	times	11	in	55,	5	times	12	in	84,	7	times
10	in	40,	4	times	11	in	66,	6	times	12	in	96,	8	times
10	in	50,	5	times	11	in	77,	7	times	12	in	108,	9	times
10	in	60,	6	times	11	in	88,	8	times	12	in	120,	10	times
10	in	70,	7	times	11	in	99,	9	times	12	in	132,	11	times
10	in	80,	8	times	11	in	110,	10	times	12	in	144,	12	times

SECTION XVI.

1. When 2 cents are paid for an orange, how many may be obtained for 4 cents? How many for 6 cents? How many for 8 cents? How many for 10 cents? How many for 12 cents?

2. Bought a bushel of quinces for 3 dollars; how many bushels may be obtained for 6 dollars? How many for 9 dollars? How many for 12 dollars? How many for 15 dollars?

3. Gave four dollars for one cord of wood; how many cords may be obtained for 8 dollars? How many for 12 dollars? For 16 dollars? For 20 dollars? For 28 dollars? For 36 dollars?

4. If 5 dollars will purchase a barrel of flour, how many barrels may be obtained for 10 dollars? For 15 dollars? For 20 dollars? For 40 dollars?

5. A cord of wood may be obtained for 6 dollars; how many cords may be obtained for 12 dollars? For 18 dollars? For 30 dollars? For 60 dollars?

9. Paid 7 cents for a quart of cherries
arts may be obtained for 27 cents? Fo
r 36 cents? For 54 cents? For 45 c
). How many yards of cotton cloth
ued for 50 cents, when one yard can b
10 cents? How many yards for 60
cents? For 90 cents? For 100 cents
10. Paid 11 cents for a penknife; how
obtained for 33 cents? For 55 cent
ts? For 88 cents? For 99 cents?
11. Bought 3 pounds of coffee at 8 ce
l paid for it with oranges at 4 cents
ny oranges did it take?
12. Sold 4 pounds of sugar at 9 cent
r many pounds of butter should I rec
ıt, at 12 cents a pound?
13. Bought 9 barrels of flour, at 4 dolla
paid for it with grain, at 2 dollars a l
ıy bushels did it take?
14. Samuel bought 5 lemons, at 4 c
4 apples, at 2 cents apiece; he pai
h nuts, at 7 cents a quart; how man

18. A man bought 12 bushels of wheat, at 2 dollars a bushel, and 4 yards of cloth, at 3 dollars a yard; he paid for them in wood, at 6 dollars a cord; how many cords did it take?

19. A grocer sold 12 pounds of coffee at 8 cents a pound; for pay, he received eggs, at 12 cents a dozen; how many dozen did he receive?

20. How much cloth, at 4 dollars a yard will it take to buy 9 cords of wood, at 4 dollars a cord?

21. How many pears, at 3 dollars a bushel, will it take to pay for 12 bushels of quinces, at 3 dollars a bushel?

22. James divided 54 cherries equally among 6 of his companions; how many did he give to each?

23. In one week there are 7 days; how many weeks in 21 days? In 14 days? In 28 days? In 42 days? In 35 days? In 56 days? In 63 days?

24. If 9 dollars be paid for a suit of clothes, how many suits can be bought for 63 dollars?

25. When flour is 8 dollars a barrel, how many barrels can be obtained for 56 dollars? For 64? For 72? For 80? For 104?

26. Bought 6 pounds of coffee, at 12 cents a pound, and paid for it with lard, at 12 cents a pound, how many pounds did it take?

27. A man divided 120 dollars equally among 10 poor persons; how many dollars did each receive?

28. How much rye, at 4 shillings a bushel, must be given for 8 bushels of wheat, at 6 shillings a bushel?

29. Bought 9 yards of broadcloth, at 8 dollars a yard, and paid for it in flour, at 12 dollars a barrel; how many barrels did it take?

30. Sold 12 tons of hay at 11 dollars a ton, and received pay in flour, at 12 dollars a barrel; how many barrels did I receive?

...w many dollars did each receive?

33. A lady divided 54 cents equal sons and 3 daughters; how many did

34. When 72 dollars are paid for what is the cost of 1 acre? Of 3 acr Of 6 acres?

35. If you pay 84 cents for 7 pou what is that a pound? What would 4 pounds? 5 pounds? 6 pounds? 8

SECTION XVII.

1. Bought 4 pounds of starch at 6 and 3 pounds of beef at 4 cents a po the whole cost?

2. A man bought 5 barrels of flour, barrel, and paid for it in fish, at 5 do how many quintals did it take?

3. James had 25 apples; he gave 4 William, 3 to Samuel, and 7 to Caroli did he give away? How many had he

4. A farmer raised 25 bushels of po 10 bushels to one man, 6 bushels to

had he at first? How many more did he give to Susan than to Moses?

8. A certain school-house has 5 rows of seats, and 9 seats in each row; how many seats are there in the school-house?

9. If a certain sum of money will last 7 men 9 days, how long would it last 1 man?

10. A young lady purchased 5 yards of silk, at 2 dollars a yard, 4 yards of crape, at 3 dollars a yard, some riband for 2 dollars, and a pair of gloves for 1 dollar; she paid 3 ten dollar bills; how many dollars did she receive back again?

11. Six men can build a wall in 9 days; how many men must be employed to build it in one day?

12. A's house is 12 rods from C's, and C's 10 rods from B's, and B's 8 rods from the meeting-house; how far is A's house from the meeting-house?

13. Bought 5 yards of cotton cloth, at 8 cents a yard, 2 yards of tape, at 4 cents a yard, and some pins for 2 cents, and paid with eggs, at 10 cents a dozen; how many dozen did it take? 10 in 50, how many times?

14. Charles owed James 48 cents; at one time he paid 10 cents, at another 8 cents, and at another time 10 oranges, at 3 cents apiece; how much then remained due?

15. A farmer sold a load of hay for 15 dollars, some apples for 5 dollars, and peaches for 6 dollars; at one time he received in payment 2 barrels of flour, at 5 dollars a barrel; at another time, 4 yards of broadcloth, at 3 dollars a yard; how much still remained due?

16. James bought of Alonzo 8 quarts of cranberries, at 12 cents a quart; to pay for them, he gave raisins worth 12 cents a pound; how many pounds did it take?

17. In a school-house there are 54 seats, and 9 seats in each row; how many rows are there?

ours? In 6 hours? In 10 hours?
20. Bought 6 pounds of raisins, at 8
id 4 quarts of vinegar, at 5 cents a qu
one time 5 pounds of butter, at 10
id at another time, 2 quarts of milk
iart; what remains due?
21. Bought 5 barrels of flour, at 4 do
id sold it again for 7 dollars a barr
in on the whole? What did I gain or

SECTION XVIII.

1. Eight are how many times 4? Ho
?
2. Twelve are how many times 3?
nes 6? How many times 4? How n
3. Sixteen are how many times 4?
nes 8? How many times 2?
4. Eighteen are how many times 6?
nes 3? How many times 2? How n
5. Twenty are how many times 4?

10. Twenty-eight are how many times 7? How many times 4?

11. Thirty are how many times 3? How many times 10? How many times 5? How many times 6?

12. Thirty-five are how many times 7? How many times 5?

13. Thirty-six are how many times 6? How many times 12? How many times 3? How many times 4? How many times 9?

14. Forty are how many times 4? How many times 10? How many times 8? How many times 5?

15. Forty-two are how many times 7? How many times 6?

16. Forty-four are how many times 11? How many times 4?

17. Forty-eight are how many times 6? How many times 12? How many times 4? How many times 8?

18. Fifty are how many times 10? How many times 5?

19. Fifty-four are how many times 9? How many times 6?

20. Fifty-five are how many times 11? How many times 5?

21. Fifty-six are how many times 7? How many times 8?

22. Sixty are how many times 10? How many times 6? How many times 5? How many times 12?

23. Sixty-three are how many times 7? How many times 9?

24. Sixty-four are how many times 8?

25. Sixty-six are how many times 11? How many times 6?

26. Seventy are how many times 10? How many times 7?

27. Seventy-two are how many times 9? How many times 8? How many times 12?

28. *Eighty* are how many times 10? How many *times 8?*

mes 11?

33. Ninety-six are how many times 8
mes 12?

34. Ninety-nine are how many times 9
mes 11?

35. One hundred are how many tin
any times 5? How many times 20?

36. One hundred eight are how ma
low many times 9?

37. One hundred ten are how ma
low many times 10?

38. One hundred twenty are how m
low many times 10?

39. One hundred thirty-two are hov
1? How many times 12?

40. One hundred forty-four are hov
2?

41. How many pounds of raisins at 8
n you buy for 24 cents? For 32 c
nts? For 48 cents? For 56 cents?

42. How many acres of land, at 9 dc
n be bought for 36 dollars? For 45
4 dollars? For 72 dollars? For 108

43. A man purchased 8 pounds of

47. If 11 dollars will purchase one piece of cotton cloth, how many pieces can be obtained for 22 dollars? For 44 dollars? For 55 dollars? For 88 dollars? For 110 dollars? For 132 dollars?

SECTION XIX.

1. If 4 bushels of apples cost 8 shillings, what cost 1 bushel? What cost 3 bushels?

Solution. If four bushels cost 8 shillings, one bushel will cost 2 shillings; because one bushel will cost one fourth part as much as 4 bushels, and a fourth part of 8 shillings is 2 shillings; and if one bushel cost 2 shillings, 3 bushels will cost three times as much; and 3 times 2 shillings are 6 shillings.

2. When 3 pounds of butter are sold for 36 cents, what is the price of 1 pound? What must be given for 5 pounds?

Solution. 1 pound will cost 12 cents, because 1 pound will cost one third part as much as 3 pounds, and 1 third of 36 cents is 12 cents; and, if one pound cost 12 cents, 5 pounds will cost 5 times 12 cents, which are 60 cents.

3. If 2 barrels of apples cost 4 dollars, what will 1 barrel cost? What cost 3 barrels? 4 barrels? 5 barrels? 6 barrels? 8 barrels?

4. When 6 dollars will purchase 3 yards of Alpine cloth, what will one yard cost? 2 yards? 4 yards? 5 yards? 7 yards? 9 yards?

5. A boy gave 8 cents for 4 pears, what did one pear cost? 2 pears? 3 pears? 5 pears? 6 pears?

6. Lucy bought 3 skeins of thread, for 9 cents; what was that a skein? What cost 2 skeins? 4 skeins? 6 skeins? 8 skeins? 9 skeins? 10 skeins?

7. Adeline gave 10 cents for 5 rolls of candy; what cost one roll? 2 rolls? 3 rolls? 4 rolls? 6 rolls?

for 14 cents, what costs one pound r pounds? 5 pounds? 9 pounds?

10. If 15 dollars will buy 5 barre many dollars must be given for one barrels? For 3 barrels? For 6 barrels?

11. Sarah gave 16 cents for 2 papers cost one paper? 3 papers? 4 papers? papers? 8 papers? 9 papers? 12 pa

12. If 4 bushels of wheat cost 16 do one bushel cost? 2 bushels? 3 bushel

13. Bought 2 pounds of butter for 1 was that a pound? What cost 3 pound

14. Sold 5 yards of broadcloth for 1 was the price of one yard? Of 2 yards Of 6 yards? Of 8 yards? Of 9 yards?

15. Margaret gave 16 cents for 4 did she give apiece? What was the co Of 3 needles? Of 5 needles? Of 7 ne

16. What cost one yard of cloth, if bought for 18 dollars? What cost 2 y 4 yards?

17. William gave 20 cents for 5 pe the cost of one peach? Of 3 peaches Of 8 peaches? Of 9 peaches? Of 12

21. If 4 oranges cost 12 cents; what will one orange cost? 2 oranges? 3 oranges? 5 oranges? 6 oranges? 7 oranges? 8 oranges? 9 oranges?

22. If 16 cents are paid for 8 nutmegs, what are they apiece? What would 2 nutmegs cost? 3 nutmegs? 4 nutmegs? 6 nutmegs? 7 nutmegs? 9 nutmegs? 12 nutmegs?

23. A man bought 8 pounds of coffee for 24 cents; what was it a pound? What cost 2 pounds? 4 pounds? 5 pounds? 6 pounds? 7 pounds? 9 pounds?

24. Bought 10 pairs of shoes for 30 dollars; what cost one pair? 2 pairs? 3 pairs? 4 pairs? 5 pairs? 7 pairs? 8 pairs? 9 pairs? 12 pairs?

25. Sold 7 barrels of flour for 28 dollars; what cost one barrel? What cost 4 barrels? 6 barrels? 8 barrels? 10 barrels? 12 barrels?

26. If 4 yards of cambric cost 32 cents, what is the cost of one yard? Of 2 yards? Of 3 yards? Of 5 yards? Of 7 yards? Of 8 yards? Of 9 yards? Of 12 yards?

27. When wheat is sold at the rate of 9 bushels for 27 dollars, what is that a bushel? What cost 2 bushels? 3 bushels? 4 bushels? 5 bushels? 6 bushels? 7 bushels? 8 bushels? 10 bushels? 11 bushels? 12 bushels?

28. If 2 pounds of rice cost 6 cents, what will 4 pounds cost? If two pounds cost six cents, one pound will cost one half as much, and one half of six cents is three cents; if one pound cost 3 cents, 4 pounds will cost 4 times as much; and 4 times 3 cents are twelve cents, Ans.

29. If four pounds of flour cost 16 cents, what will 1 pound cost? 2 pounds? 5 pounds? 8 pounds? 12 pounds? 9 pounds? 7 pounds? 11 pounds?

30. If 9 ounces of nutmegs cost 45 cents, what will one ounce cost? What will 10 ounces cost?

31. If 48 cents are paid for 6 dozen of eggs, what

tons? 10 tons? 11 tons? 12 tons?

33. Paid 63 cents for 7 pounds was the cost of one pound? Of 2 pounds? Of 9 pounds? Of 10 pounds Of 12 pounds?

34. James gave 72 cents for 9 steel the price of one? If one pen cost 8 10 pens? 11 pens? 12 pens? 13 pe

35. Mary purchased 9 yards of mu what was that a yard? What cos yards? 12 yards? 7 yards? 5 yards

36. A farmer sold at market 8 c which he received 64 dollars; what d cord? What for 4 cords? 5 cords?

37. A merchant bought 7 boxes of lars; what was that a box? What boxes? 8 boxes? 9 boxes? 10 box(

38. A lady purchased 9 yards cents; what cost one yard? 2 ya yards? 8 yards? 10 yards? 11 ya

39. A gentleman purchased 12 y for 60 dollars; what was the cost yards? 4 yards? 6 yards? 7 yar

11 yards? 13 yards? 15 y

Two of these parts are called two thirds, and are written thus, $\frac{2}{3}$.

This number ($\frac{2}{3}$) is called a *fraction*, and the 3 *below* the line is called the denominator of the fraction, and shows into how many parts the pear (or whatever the thing may be) is divided, and the 2 *above* the line is called the numerator, and shows how many parts of the pear are taken.

1. If one third ($\frac{1}{3}$) of an orange cost 2 cents, what cost two thirds ($\frac{2}{3}$)?

Solution. Two thirds ($\frac{2}{3}$) will cost twice as much as one third ($\frac{1}{3}$). Twice 2 cents are 4 cents, Ans.

2. When three eighths ($\frac{3}{8}$) of a dollar are paid for 12 yards of riband, how much can be bought for one eighth ($\frac{1}{8}$) of a dollar? How much for seven eighths ($\frac{7}{8}$) of a dollar? How much for $\frac{8}{8}$?

Solution. If 3 eighths of a dollar will buy 12 yards, 1 eighth of a dollar will buy 1 third as many yards, and 1 third of 12 yards is 4 yards. And, if 1 eighth of a dollar buy 4 yards, 7 eighths of a dollar will buy 7 times as many, and 7 times 4 yards are 28 yards; and 8 eighths of a dollar, which is a whole dollar, will buy 8 times 4 yards, which are 32 yards, Ans.

3. How many halves are there in an orange?
4. How many thirds are there in a cent?
5. How many ninths in a dollar?
6. How many twelfths in a bushel?
7. 2 is one half of what number?
8. 3 is one third of what number?
9. 5 is one fifth of what number?
10. 7 is one twelfth of what number?
11. 4 is one eighth of what number?
12. 5 is one sixth of what number?
13. 6 is one eighth of what number?
14. 9 is one fourth of what number?
15. 8 is one fifth of what number?
16. 10 is one fourth of what number?

t cost 1 pound?
1. If a third of an orange cost one cost of a whole orange?
2. Bought 1 sixth of a barrel of flour t cost 1 barrel at the same rate?
3. 3 is one third of what number?
4. 2 is one fourth of what number?
5. A man bought 1 eighth of a ton ars; what was the cost of a ton at that
6. 8 is one third of what number?
7. 6 is one seventh of what number?
8. 9 is one eighth of what number?
9. 10 is one fifth of what number?
0. 7 is one fourth of what number?
1. 9 is one tenth of what number?

SECTION XXI.

If you can buy an orange for 2 cents ou buy for one cent?
ie is what part of two?
is. One is one half of two.
How many times 1 are there in 2?

How many times 2 are there in 5?

Ans. Two times 2 and one half of 2.

6. How many times 2 are there in 8?

7. 9 are how many times 2?

Ans. 4 times 2 and a half of 2.

8. 10 are how many times 2?

9. 12 are how many times 2?

10. If an orange is worth 3 cents, and it be cut into 3 equal parts, what is one of those parts, or one third of it, worth? What is the third of 3? What are two thirds of 3?

11. When wood is worth 4 dollars a cord, what part of a cord will 1 dollar buy? What part of a cord will 2 dollars buy?

12. If you can buy a yard of cloth for 3 dollars, how many yards can you buy for 4 dollars? How many for 5 dollars? How many for 6 dollars?

13. 4 are how many times 3? 6 are how many times 3?

14. If a pound of iron can be purchased for 3 cents, how many pounds will 7 cents purchase?

7 are how many times 3?

15. How many times 3 are there in 8?

16. 9 are how many times 3?

17. 10 are how many times 3?

18. How many times 3 in 11? 12 are how many times 3?

19. If you buy a bushel of corn for 4 shillings, and divide it into 4 equal parts, what will one of those parts, or one fourth of it, be worth? What will 2 fourths be worth? What will 3 fourths be worth?

20. What is one fourth of 4? Ans. One fourth of 4 is one.

21. 2 is what part of 4? 3 is what part of 4?

22. Bought a small piece of land for 6 dollars, and divided it into 6 equal parts; what was 1 part, or one sixth of it, worth? What were 2 sixths of it worth? What were 3 sixths of it worth? 4 sixths?

1. If half a barrel of flour cost 4 dolla
the value of a whole barrel? Ans. 8
use two halves are twice as much as one
2. If one third of a pound of raisins cost
ll be the price of a whole pound? Ans.
3. If one third of a bushel of nuts co
at cost two thirds? Ans. 4 dollars;
rds are twice one third.
4. What cost 2 yards and one half o
and, at 2 cents a yard? Ans. 5 cents?
2 times 2 and one half of 2 are how ma
5. At 3 shillings a gallon, what cost 4
e third of a gallon of oil?
4 times 3 and one third of 3 are how m
6. At 3 dollars a cord, what cost 4 cords
a cord of wood?
4 times 3 and 2 thirds of 3 are how ma
7. At 6 shillings a bushel, what cost 3
e third of a bushel of rye?
8. If a box of sugar cost 5 dollars, what
l 2 fifths of a box?

15. 7 times 6 and 4 sixths of 6 are how many?

16. 6 times 6 and 3 sixths of 6 are how many?

17. At 7 dollars a cord, what cost 3 cords and 1 seventh of a cord of wood? What will 4 cords and 4 sevenths of a cord cost?

3 times 7 and 1 seventh of 7 are how many?

18. 4 times 7 and 4 sevenths of 7 are how many?

19. 5 times 7 and 5 sevenths of 7 are how many?

20. 3 times 5 and 4 fifths of 5 are how many?

21. 8 times 4 and 3 fourths of 4 are how many?

22. At 8 dollars a yard, what cost 3 yards and 1 eighth of a yard of cloth?

3 times 8 and 1 eighth of 8 are how many?

23. 3 times 7 and 2 sevenths of 7 are how many?

24. 5 times 7 and 4 sevenths of 7 are how many?

25. 8 times 7 and 5 sevenths of 7 are how many?

26. 9 times 7 and 6 sevenths of 7 are how many?

27. When hay is 9 dollars a ton, what will 3 tons and 1 ninth of a ton cost? What will 5 tons and 3 ninths of a ton cost?

28. 3 times 9 and 1 ninth of 9 are how many?

29. 5 times 9 and 3 ninths of 9 are how many?

30. 6 times 9 and 5 ninths of 9 are how many?

31. 7 times 9 and 4 ninths of 9 are how many?

32. 2 times 10 and 1 tenth of 10 are how many?

33. 5 times 10 and 3 tenths of 10 are how many?

34. At 10 cents a pound, what cost 6 pounds and 3 tenths of a pound of raisins?

6 times 10 and 3 tenths of 10 are how many?

35. At 9 cents a pound, what cost 8 pounds and 5 ninths of a pound of butter?

8 times 9 and 5 ninths of 9 are how many?

SECTION XXIII.

1. If you can buy a pound of raisins for 8 cents, *what part of* a pound can you buy for 1 cent? What

2. If you can buy a pound of coffee
is 1 ninth of it worth? What are 2
8 ninths? 5 ninths? 6 ninths? 8 ni

3. A man bought a hogshead of mol
what part could he buy for 1 dollar?
dollars? 3 dollars? 5 dollars? 6 d
How much for 10 dollars? 12 dollar
dollars?

4. Bought a quart of cherries fc
would one tenth of a quart cost? 2
4 tenths? 6 tenths? 8 tenths? 9 te

5. Gave 10 dollars for an acre of
part of an acre would 1 dollar buy?
2 dollars buy? 3 dollars? 4 dolla
dollars? 9 dollars? How much wou
14 dollars? 18 dollars? 20 dollars?

6. 10 are how many times 2? 4?
7. 11 are how many times 7? 8?
8. 9 are how many times 4? 5?
9. 8 are how many times 5? 6?
10. 12 are how many times 4? 5
11. 14 are how many times 2? 3

flour could he buy with that sum at 4 dollars a barrel? How many at 5 dollars a barrel? How many at 7 dollars a barrel? How many at 8 dollars a barrel?

19. 24 are how many times 4? 6? 8? 3? 7? 10?

20. 28 are how many times 3? 4? 6? 7? 8? 10?

21. 25 are how many times 5? 4? 3? 6? 8? 9?

22. 27 are how many times 3? 8? 9? 7? 6? 11? 2? 4? 5? 10? 12? 13? 14? 15? 16?

23. 30 are how many times 4? 5? 10? 3? 6? 7? 9? 8? 11? 12? 13? 14? 15? 16?

24. 32 are how many times 8? 4? 5? 7? 6? 9?

25. 35 are how many times 6? 7? 4? 5? 12?

26. 40 are how many times 5? 6? 8? 4? 10? 12? 2? 3? 7? 9? 13? 14? 15? 16? 17?

27. If a pound of coffee cost 6 cents, how many pounds can be bought for 46 cents? For 32 cents?

28. At 8 cents a pound, how many pounds of sugar can be bought for 48 cents? For 50 cents? For 58 cents?

29. 46 are how many times 5? 7? 8? 9? 10? 11? 12? 13? 14? 15? 18? 20?

30. 48 are how many times 6? 7? 4? 9? 8? 11?

31. A lady had 50 dollars; how many yards of silk could she purchase at 4 dollars a yard? How many could she purchase at 5 dollars a yard? How many at 10 dollars a yard? 8 dollars a yard?

32. 50 are how many times 5? 6? 7? 8? 10? 9? 2? 3? 4? 11? 12? 13? 20? 25?

33. 56 are how many times 8? 9? 6? 4? 7? 5?

SECTION XXIV.

1. 6 is $\frac{3}{4}$ of what number?

Solution. If 6 be 3 fourths, 2 will be 1 fourth, and if 2 be 1 fourth, 8 will be 4 fourths, because 4 times 2 are 8; *therefore* 6 is $\frac{3}{4}$ of 8.

Solution. If 16 be 4 fifths, because 4 is 1 fourth of 16, and if 4 be 5 fifths; therefore 16 is $\frac{4}{5}$ of 20

4. 20 is $\frac{4}{7}$ of what number?
5. 21 is $\frac{3}{4}$ of what number?
6. 15 is $\frac{5}{6}$ of what number?
7. 10 is $\frac{2}{11}$ of what number?
8. 18 is $\frac{3}{7}$ of what number?
9. 22 is $\frac{1}{11}\frac{1}{2}$ of what number?
10. 24 is $\frac{6}{7}$ of what number?
11. 25 is $\frac{5}{11}$ of what number?
12. 28 is $\frac{4}{7}$ of what number?
13. 30 is $\frac{5}{9}$ of what number?
14. 36 is $\frac{6}{11}$ of what number?
15. 30 is $\frac{2}{3}$ of what number?
16. 40 is $\frac{8}{9}$ of what number?
17. 48 is $\frac{6}{7}$ of what number?
18. 42 is $\frac{7}{9}$ of what number?
19. 60 is $\frac{1}{9}$ of what number?
20. 66 is $\frac{6}{7}$ of what number?
21. 72 is $\frac{2}{3}$ of what number?
22. 80 is $\frac{8}{11}$ of what number?

gave 18 dollars to some poor persons, it being $\frac{6}{11}$ of what he had; how much had he then left?

28. A boy had a quantity of nuts; $\frac{7}{8}$ of them, which were 42, were in one pocket, and the remainder in the others; how many nuts had he?

SECTION XXV.

Table of United States Money.

10 Mills	make	1 Cent,	marked	c.
10 Cents	"	1 Dime,	"	d.
10 Dimes	"	1 Dollar,	"	$.
10 Dollars	"	1 Eagle,	"	E.

1. How many mills in 1 cent? In 2 cents? In 4 cents? In 5 cents? In 6 cents? In 10 cents? In 12 cents? In 20 cents? In 30 cents? In 35 cents? In 40 cents?

2. How many cents in 19 mills? In 20 mills? In 40 mills? In 50 mills? In 70 mills? In 80 mills? In 100 mills? In 110 mills? In 140 mills? In 150 mills? In 200 mills?

3. How many cents in 1 dime? In 2 dimes? In 4 dimes? In 5 dimes? In 7 dimes? In 8 dimes? In 9 dimes? In 10 dimes? In 14 dimes? In 20 dimes? In 25 dimes? In 35 dimes? In 50 dimes? In 100 dimes? In 110 dimes? In 120 dimes? In 140 dimes? In 150 dimes? In 155 dimes? In 175 dimes? In 200 dimes?

4. How many cents in 1 dollar? In 2 dollars? In 4 dollars? In 5 dollars? In 7 dollars? In 9 dollars? In 10 dollars? In 12 dollars? In 14 dollars? In 15 dollars? In 20 dollars?

5. How many dimes in 20 cents? In 40 cents? In 50 cents? In 80 cents? In 100 cents? In 110 cents? In 140 cents? In 150 cents? In 200 cents?

6. *How many* dimes in 1 dollar? In 2 dollars? In

8. How many dollars in 2 eagles? In 6 eagles? In 9 eagles? In 12 eagles? In 40 eagles? In 50 eagles? In 80 eagles? In 85 eagles? In 100

9. How many dimes in 20 cents? In 40 cents? In 50 cents? In 70 cents? In 100 cents? In 110 cents? In 140 cents? In 150 cents? In 200 ce

10. How many dollars in 20 dimes? In 100? How many cents in 1 eagle? In 4 eagles? In 5 eagles?

11. How many dimes in 1 eagle? 3 eagles? In 4 eagles? In 6 eagles?

12. If you wish to divide a dollar your companions, how many cents wo each? How many dimes to each?

13. A man divided an eagle equally sons; how many dollars did he give How many dimes to each? How man

SECTION XXVI.

In 16 farthings? In 20 farthings? In 24 farthings? In 32 farthings? In 36 farthings? In 40 farthings? In 44 farthings? In 48 farthings?

2. How many farthings in 2 pence? In 4 pence? In 6 pence? In 9 pence? In 10 pence? In 11 pence? In 12 pence? In 20 pence? In 30 pence? In 40 pence?

3. How many shillings in 12 pence? In 24 pence? In 48 pence?

4. How many pence in 2 shillings? In 4 shillings? In 5 shillings? In 7 shillings? In 8 shillings? In 9 shillings? In 10 shillings? In 11 shillings? In 12 shillings?

5. In 20 shillings how many pounds? In 40 shillings? In 80 shillings? In 160 shillings? How many shillings in 2 pounds? In 3 pounds? In 4 pounds? In 5 pounds?

SECTION XXVII.

Table of Troy Weight.

24 Grains	make	1 Pennyweight,	marked	dwt.
20 Pennyweights	"	1 Ounce,	"	oz.
12 Ounces	"	1 Pound,	"	lb.

By this weight are weighed gold, silver, and jewels.

1. How many pennyweights in 24 grains? In 48?

2. How many ounces in 20 pennyweights? In 40 dwt.? In 80 dwt?

3. In 12 ounces how many pounds? In 24 ounces? In 36 ounces? In 48 ounces? In 60 ounces? In 72 ounces? In 84 ounces?

4. If one silver spoon weigh 4 ounces, what will 6 spoons weigh? 8 spoons? 10 spoons? 12 spoons?

5. Bought 3 ounces of gold for 28 dollars; what cost *one ounce?* 4 ounces? 5 ounces? 8 ounces? *9 ounces? 10* ounces? 12 ounces?

ings a dwt.; what did he receive?

10. In 4 pounds how many ounces? pounds?

11. In 3 ounces how many pennyweig

12. How many grains in 2 pennyweig

SECTION XXVIII.

Table of Apothecaries' W

20 Grains	make	1 Scruple,	mark
3 Scruples	"	1 Dram,	"
8 Drams	"	1 Ounce,	"
12 Ounces	"	1 Pound,	"

Note. — The above table is used by apothe their medicines, but they buy and sell them by

1. How many grains in 1 scruple? 2 scruples? In 3 scruples? In 4 sc scruples?

2. How many drams in 8 scruples?

In 3 pounds? In 6 pounds? In 8 pounds? In 9 pounds? In 10 pounds? In 12 pounds?

6. In 16 drams how many ounces?
7. In 4 scruples how many grains?
8. In 5 pounds how many ounces?
9. How many drams in 7 ounces?
10. In 9 drams how many scruples?

SECTION XXIX.

Table of Avoirdupois Weight.

16 Drams	make	1 Ounce,	marked	oz.
16 Ounces	"	1 Pound,	"	lb.
28 Pounds	"	1 Quarter,	"	qr.
4 Quarters	"	1 Hundred-weight,	"	cwt.
20 Hundred-weight,	"	1 Ton,	"	ton.

By this weight are weighed almost every kind of goods, and all metals except gold and silver. By a late law of Massachusetts, the cwt. contains 100 lbs. instead of 112 lbs.

1. How many ounces in 1 pound? In 2 pounds?
2. How many ounces in 1 pound 6 ounces?
3. How many pounds in 16 ounces? How many pounds in 17 ounces? Ans. 1 pound 1 ounce.
4. In 20 ounces how many pounds? In 22 ounces? In 24 ounces? In 28 ounces? In 32 ounces?
5. In one hundred-weight, how many quarters?
6. In 2 hundred-weight, how many quarters? In 4 hundred-weight? In 6? In 8? In 10? In 12?
7. How many tons in 20 hundred-weight? How many in 40 hundred-weight? In 80 hundred-weight? In 60 hundred-weight? In 100 hundred-weight?
8. How many hundred-weight in 2 tons? In 3 tons? In 4 tons? In 5 tons?

9. Bought 4 hundred-weight of sugar, at 9 dollars a hundred-weight; what was the cost?

10. How many drams in 1 ounce? In 2 ounces? In 3 ounces?

SECTION XXX.

Table of Long Measure.

10 Lines	make	1 Inch,	marked	in.
12 Inches	"	1 Foot,	"	ft.
3 Feet	"	1 Yard,	"	yd.
$5\frac{1}{2}$ Yards, or $16\frac{1}{2}$ feet	"	1 Rod, or pole,	"	rd.
40 Rods	"	1 Furlong,	"	fur.
8 Furlongs	"	1 Mile,	"	m.
3 Miles	"	1 League,	"	lea.
$69\frac{1}{2}$ Miles (nearly)	"	1 Degree,	"	deg. or °.
360 Degrees	"	1 Circle of the Earth.		

1. How many furlongs in 1 mile? In 2 miles? In 4 miles?

2. How many miles in 3 leagues? In 4 leagues? In 7 leagues? In 9 leagues?

3. How many furlongs in 30 rods? In 160 rods?

4. How many yards in 2 rods? In 4 rods? In 5 rods?

5. How many feet in 12 yards? In 6 yards? In 18 yards?

6. How many inches in 2 feet? In 4 feet? In 8 feet?

7. How many inches in 3 feet 6 inches?

8. How many furlongs in 80 rods? In 96 rods?

9. If a man can travel 45 miles in 9 hours, how far will he travel in 1 hour? How far in 4 hours? In 6 hours? In 8 hours? In 10 hours? In 12 hours?

10. There are 8 furlongs in 1 mile; how many furlongs in 6 miles? In 7 miles? In 9 miles?

11. In 4 feet, how many inches?
12. In 3 furlongs, how many rods?
13. If a man can travel 1 furlong in 5 minutes, how long will it take him to travel 1 mile?

SECTION XXXI.

Table of Cloth Measure.

2¼	Inches	make 1 Nail,	marked	na.
4	Nails	" 1 Quarter of a Yard,	"	qr.
4	Quarters	" 1 Yard,	"	yd.
3	Quarters	" 1 Ell Flemish,	"	E. F.
5	Quarters	" 1 Ell English,	"	E. E.

Note. — The Ell French is not in use.

1. How many nails in 1 quarter? In 2 quarters?
2. How many nails in 3 quarters? In 4 quarters? In 5 quarters? In 6 quarters? In 8 quarters?
3. How many quarters in 1 yard? In 4 yards? In 7 yards? In 9 yards?
4. How many yards in 8 quarters? In 16 quarters? In 24 quarters?
5. How many quarters in 4 ells Flemish? In 7 ells?
6. How many ells English in 10 quarters? In 15 quarters? In 25 quarters? In 20 quarters?
7. What cost 2 yards and 1 quarter of a yard of cloth, at 4 dollars a quarter?
8. How many nails in 16 quarters? In 20 quarters? In 24 quarters? In 28 quarters. In 32 quarters?
9. What cost 10 yards of broadcloth, at 5 dollars a yard? What cost 12 yards? 8 yards? 11 yards?
10. How many quarters in 16 nails?
11. How many yards in 20 quarters?
12. How many ells English in 30 quarters?

30¼	Square yards	"	1 Square ro
72¼	Square feet	"	1 Square ro
40	Square rods	"	1 Rood,
4	Roods	"	1 Acre,
40	Acres	"	1 Square mi

1. How many square feet in 1 square
quare yards? In 3 square yards?
ards? In 5 square yards? In 7 squa
square yards? In 9 square yards?
2. How many square feet in 2 squar
3. How many square yards in 27 squ
6 square feet? In 37 square feet?
4. How many acres in 16 roods? I
5. How many roods in 4 acres? I
acres?
6. What cost 12 acres of land, at 9 d
7. How many square rods in a field
rods wide?
8. What cost a piece of land 7 ro
ide, at 1 dollar a square rod?

1. How many cubic feet in 3 tons of timber?
2. How many cubic feet in 5 tons of timber?
3. What cost 7 cords of wood at 5 dollars a cord?
4. What cost 12 tons of timber at 7 dollars per ton?
5. What cost 50 cubic yards of marble at 10 dollars per yard?
6. How many cubic feet in 10 cubic yards?
7. How many cubic feet in 10 cords?
8. What cost 100 cords of wood at 10 dollars per cord?

SECTION XXXIV.

Table of Wine Measure.

4 Gills	make	1 Pint,	marked	pt.
2 Pints	"	1 Quart,	"	qt.
4 Quarts	"	1 Gallon,	"	gal.
42 Gallons	"	1 Tierce,	"	tier.
63 Gallons	"	1 Hogshead,	"	hhd.
2 Tierces	"	1 Puncheon,	"	pun.
2 Hogsheads	"	1 Pipe or butt,	"	pi.
2 Pipes or 4 Hhds.	"	1 Tun,	"	tun.

1. How many gills in 4 pints? In 2 pints? In 6 pints? In 8 pints? In 10 pints? In 12 pints?
2. How many quarts in 6 pints? In 8 pints? In 10 pints?
3. In 16 gallons how many quarts? In 20 gallons?
4. How many gills in one quart? In 2 quarts?
5. How many gills in one gallon?
6. In one tun, how many hogsheads? In 2 tuns? In 4 tuns? In 6 tuns? In 9 tuns? In 10 tuns?
7. What cost 8 gallons of vinegar, at 5 cents a quart? At 6 cents? At 8 cents? At 12 cents?
8. What cost 9 hogsheads of molasses, at 12 dollars a hogshead? At 9 dollars? At 7 dollars?

SECTION XXXV.

Table of Ale and Beer.

2 Pints	make	1 Quart,
4 Quarts	"	1 Gallon,
32 Gallons	"	1 Barrel,
54 Gallons	"	1 Hogshead
2 Hogsheads	"	1 Butt,
2 Butts	"	1 Tun,

Note. — By a law of Massachusetts, the Beer shall contain 32 gallons. Milk *shou* measure.

In 2 quarts, how many pints? In quarts? In 12 quarts? In 16 quarts

2. How many hogsheads in 1 butt

3. How much will 7 quarts of mil a quart? What cost 8 quarts? 9 qu

7. Bought 9 quarts of milk for 54 cents; what was the cost of 1 quart? Of 2 quarts? Of 3 quarts? Of 4 quarts? Of 5 quarts? Of 7 quarts? Of 8 quarts? Of 12 quarts?

SECTION XXXVI.

Table of Dry Measure.

2 Pints	make	1 Quart,	marked	qt.
4 Quarts	"	1 Gallon,	"	gal.
2 Gallons	"	1 Peck,	"	pk.
4 Pecks	"	1 Bushel,	"	bu.
36 Bushels	"	1 Chaldron,	"	ch.

This measure is applied to all Dry Goods, as Corn, Fruit, Salt, Coals, &c. A Winchester bushel is 18½ inches diameter, and 8 inches deep.

1. How many pints in 1 quart? In 2 quarts? In 4 quarts? In 6 quarts? In 8 quarts? In 10 quarts?
2. How many quarts in 12 pints? In 18 pints? In 20 pints? In 24 pints? In 30 pints? In 40 pints?
3. How many pecks in 12 gallons? In 16 gallons? In 20 gallons? In 24 gallons? In 32 gallons? In 36 gallons? In 48 gallons?
4. How many gallons in 4 pecks? In 5 pecks? In 6 pecks?
5. In 2 bushels how many pecks? In 6 bushels? In 9 bushels?
6. How many pecks in 4 bushels? In 5 bushels? In 9 bushels?
7. In 6 pecks how many gallons? In 7 pecks? In 10 pecks? In 12 pecks?
8. How many pints in 1 gallon? In 2 gallons?
9. What cost 5 pecks of salt, at 12 cents a peck?

SECTION XXXVI

Table of Time.

60 Seconds, or 60″	make	1	Minute,
60 Minutes	"	1	Hour,
24 Hours	"	1	Day,
7 Days	"	1	Week,
4 Weeks	"	1	Month,
52 Weeks	"	1	Year,
12 Calendar Months	"	1	Year,

The following table will exhibit t
months, and the number of days in ea

1st	month,	January,	has	31	da
2d	"	February,	"	28	"
3d	"	March.	"	31	"

March, April, and May, are the months of Spring; June, July, and August, are the months of Summer; September, October, and November, are the months of Autumn; and December, January, and February, are the Winter months.

The following distich will enable the pupil to remember the number of days in each month.

'Thirty days hath September,
April, June, and November;
All the rest have thirty-one,
Excepting February all alone,
Which hath twenty-eight in fine,
Except in leap year, twenty-nine.'

As there are 365 days 6 hours in a year, in four years there will be 24 hours, or one day overplus. This one day is added to February, which gives that month 29 days once in four years. This year is called bissextile, or leap year, and has 366 days.

1. How many weeks in 1 month? How many in 2 months? In 4 months? In 8 months? In 9 months? In 10 months? In 12 months?

2. How many days in a week? In 2 weeks? In 4 weeks? In 6 weeks? In 3 weeks? In 12 weeks?

3. How many days in 7 weeks? In 8 weeks? In 10 weeks? In 9 weeks? In 5 weeks? In 11 weeks?

4. In 14 days, how many weeks? In 21 days? In 42 days? In 49 days? In 63 days? In 84 days? In 56 days?

5. How many months in 12 weeks? In 16 weeks? In 24 weeks? In 36 weeks? In 48 weeks? In 96 weeks? In 132 weeks?

6. How many of the months have 31 days? Which are they?

7. How many of the months have 30 days? Which are they?

SECTION XXXVI

Table of Circular M

60 Seconds	make	1 Minute,
60 Minutes	"	1 Degree,
30 Degrees	"	1 Sign,

12 Signs, or 360 Degrees, the whole the Zodiac.

1. How many seconds in 2 minutes? In 4 minutes?
2. How many seconds in 3 minute
3. How many degrees in 2 signs?
4. How many signs in 30 degrees In 100 degrees? In 120 degrees?

SECTION XXXI

1. Bought a melon, which I equa

3. If an orange were equally divided among 7 boys, what part of the orange would each receive? Ans. One seventh $= \frac{1}{7}$.

4. If 3 oranges were equally divided among 7 boys, what part of an orange would each receive? Ans. Three sevenths $= \frac{3}{7}$. Why?

5. If 4 oranges were equally divided among 7 boys, what part of an orange would each receive? If 5 oranges? If 6 oranges? If 7 oranges?

6. How many sevenths are there in 1 orange? How many sevenths in 2 oranges? In 5 oranges? In 8 oranges? In 9 oranges? In 10 oranges?

7. How many fifths are there in 2 apples? In 3 apples? In 6 apples? In 7 apples? In 9 apples?

8. If 3 apples were equally divided among 5 boys, how many fifths would each receive?

Illustration. As each apple has 5 fifths, 3 apples have 15 fifths $= \frac{15}{5}$; and one fifth of 15 is 3; therefore each boy would receive three fifths of an apple, written thus, $\frac{3}{5}$.

9. Divided 9 barrels of flour equally among 4 men; how many sixths of a barrel did each receive? How many ninths? How many twelfths? How many half-barrels did each receive?

10. Bought 4 bushels of apples, and paid for them in cherries, a quart of cherries being valued at a third of a bushel of apples; how many quarts of cherries were given for one bushel? How many for the 4 bushels? How many quarts of cherries must be given for 10 bushels?

11. Distributed 6 dollars equally among 4 poor persons; how many quarters of dollars did each receive? How many half quarters did each receive?

12. How many fourths are there in 4?

13. How many fourths in 4 and 1 fourth $= 4\frac{1}{4}$?

NOTE. — *This* number, $4\frac{1}{4}$, is called a mixed number; because *it consists of* a whole number, 4, and a fraction, $\frac{1}{4}$, and is read, *four and one fourth.*

quart; what did they cost?

19. How many ninths are there in 9 $=9\frac{4}{9}$? In 7 and 2 ninths $=7\frac{2}{9}$? In 2 $=2\frac{1}{9}$? In 3 and 8 ninths $=3\frac{8}{9}$? In 6 $=6\frac{5}{9}$?

20. How many fifths in 3? In 3 an $\frac{2}{5}$? In 3 and 4 fifths $=3\frac{4}{5}$? In 4 and $\frac{3}{5}$? In 4 and 4 fifths $=4\frac{4}{5}$?

SECTION XL.

1. If a man give half a dollar for a bu what would be the price of 2 bushels?

2. How many halves make 1?

3. Gave one third of a dollar for a bus what would be the cost of 3 bushels?

4. How many thirds make 1?

5. Paid John Smith one fifth of a doll of nuts; what would he charge me for 5

6. How many fifths make 1?

7. John Dow charged me one dollar fo

13. John has 19 quarters of dollars; how many whole dollars would they make?

14. How many quarters of dollars in 12 dollars? In 7 dollars? In 9 dollars? In 3 dollars?

15. How many dollars in 24 quarters? In 30 quarters?

16. How many dollars in 16 eighths of a dollar?

17. How many 1's, or whole numbers, in 12 fourths? Ans. 3 1's, or whole numbers; because 4 fourths make 1, and 12 fourths are 3 times as many as 4 fourths.

18. How many 1's in 15 fifths? In 20 fifths?

19. How many 1's in 12 sixths? In 24 sixths? In 30 sixths? In 42 sixths? In 60 sixths?

20. How many sixths make 1?

SECTION XLI.

1. How many are 4 times 3 fifths? Ans. 12 fifths.

2. How many 1's in 12 fifths? Ans. As 5 fifths make 1, 12 fifths will make as many 1's as 12 will contain 5; and 12 contains 5 twice and 2 fifths of 5 $= 2\frac{2}{5}$.

3. How many are 5 times 3 eighths?

4. How many 1's in 15 eighths $= \frac{15}{8}$.

NOTE. — This fraction, $\frac{15}{8}$, is called an improper fraction; because its numerator exceeds the denominator. Its value is obtained by finding the number of times the numerator contains the denominator; and, as 15 eighths contain 8 eighths once and 7 eighths, its value is $1\frac{7}{8}$.

5. How many are 7 times 5 ninths?

6. How many 1's in 35 ninths $= \frac{35}{9}$?

7. How many are 5 times 2 ninths?

8. How many 1's in 10 ninths $= \frac{10}{9}$?

9. How many are 4 times 7 eighths?

16. How many 1's in 21 thirds = $\frac{21}{3}$?
17. How many are 9 times 3 elevenths?
18. How many 1's in 27 elevenths = $\frac{27}{11}$?
19. How many are 7 times 8 halves?
20. How many are 11 times 7 thirds?
21. How many are 8 times 3 sevenths?
22. How many are 5 times 7 thirds? 6 thirds? 10 thirds? 11 thirds? 12 thirds?
23. How many 1's in 4 ninths? In 5 ninths? In 7 ninths? In 8 ninths? In 10 ninths? In 11 ninths?
24. How many are 10 times 1 half? 2 halves? 4 halves? 6 halves? 8 halves? 10 halves?
25. How many 1's in 10 halves? In 20 halves? In 30 halves? In 40 halves? In 50 halves?
26. How many are 12 times 1 third? 2 thirds? 4 thirds? 5 thirds? 6 thirds? 8 thirds?

SECTION XLII.

be divided each into 3 equal parts, 5 of these parts are 5 thirds $= \frac{5}{3}$. As 3 thirds $= \frac{3}{3}$ make 1, 5 thirds will make 1 and 2 thirds $= 1\frac{2}{3}$.

3. What is $\frac{1}{3}$ of 7? Ans. $\frac{7}{3} = 2\frac{1}{3}$.

4. What is $\frac{1}{3}$ of 8? Of 9? Of 10? Of 11? Of 12?

5. What is $\frac{2}{3}$ of 7? Ans. $\frac{14}{3} = 4\frac{2}{3}$.

Illustration. Two thirds of 7 will be two times as many as one third of 7, and 1 third of 7 is 7 thirds; therefore 2 thirds of 7 will be 14 thirds $= \frac{14}{3}$. Then as 3 thirds make a unit or 1, 14 thirds will make as many units or 1's, as 14 will contain 3, and 14 contains 3, 4 times and 2 thirds $= 4\frac{2}{3}$.

6. What is $\frac{1}{4}$ of 5? Ans. $\frac{5}{4} = 1\frac{1}{4}$.

7. What is $\frac{1}{4}$ of 6? Of 7? Of 8? Of 9? Of 10? Of 11? Of 12? Of 14? Of 15? Of 16? Of 20? Of 24? Of 28?

8. What is $\frac{3}{4}$ of 7? Ans. $5\frac{1}{4}$.

Illustration. 1 fourth of 7 is $\frac{7}{4}$, and 3 fourths is 3 times as many, and 3 times 7 fourths are 21 fourths $= \frac{21}{4}$, and 21 fourths are $5\frac{1}{4}$.

9. How many are $\frac{3}{4}$ of 8? Of 9? Of 10? Of 11? Of 12? Of 13? Of 14? Of 15? Of 16? Of 18? Of 20? Of 24?

10. How many are $\frac{1}{5}$ of 4? Of 5? Of 6? Of 7? Of 8? Of 12? Of 9? Of 10? Of 11? Of 16? Of 17? Of 20? Of 30?

11. How many are $\frac{2}{5}$ of 3? Of 5? Of 7? Of 9? Of 10? Of 12? Of 16? Of 17? Of 18? Of 20? Of 24?

12. How many are $\frac{3}{5}$ of 7? Of 8? Of 9? Of 10? Of 11? Of 12? Of 15? Of 16? Of 17? Of 18? Of 19? Of 20?

13. How many are $\frac{4}{5}$ of 3? Of 4? Of 5? Of 7? Of 10? Of 12? Of 9? Of 11? Of 13? Of 15? Of 16? Of 18?

14. How many are $\frac{1}{6}$ of 7? Of 8? Of 9? Of

8? Of 11? Of 12? Of ...
Of 17? Of 18? Of 20?

16. James and John bought a barn for which they paid 14 dollars; of th paid $\frac{2}{7}$, and John the remainder; what Ans. James paid 6 dollars, and John p

Illustration. $\frac{1}{7}$ of 14 dollars is 2 dol be three times as many, and 3 times dollars, James's part; 14 less 6 are 8 part.

17. Two men, Ames and Johnson, m ulation 42 dollars; $\frac{4}{7}$ of this sum belon and the remainder to Johnson; how m each receive?

18. Gave 45 cents to Thomas and S is to have $\frac{5}{9}$ of them, and Samuel how many does each receive?

19. James received $\frac{5}{7}$ of a certain bles, his share being 25; Richard mainder, how many does he receive?

5. How many are 4 times $\frac{3}{7}$? $\frac{3}{5}$? $\frac{4}{5}$? $\frac{6}{7}$? $\frac{8}{11}$? $\frac{9}{10}$?
6. How many are 8 times $\frac{8}{7}$? $\frac{11}{7}$? $\frac{4}{9}$? $\frac{7}{8}$? $\frac{5}{12}$? $\frac{8}{11}$?
7. How many are 9 times $\frac{3}{7}$? $\frac{4}{11}$? $\frac{8}{9}$? $\frac{6}{7}$? $\frac{4}{11}$? $\frac{7}{12}$?
8. How many are 12 times $\frac{3}{7}$? $\frac{4}{11}$? $\frac{5}{6}$? $\frac{4}{5}$? $\frac{7}{8}$?
9. How many are 7 times $\frac{7}{11}$? $\frac{6}{7}$? $\frac{8}{9}$? $\frac{11}{12}$? $\frac{8}{11}$?
10. How many are 6 times $\frac{1}{2}$? $\frac{2}{3}$? $\frac{3}{4}$? $\frac{5}{6}$? $\frac{6}{7}$? $\frac{7}{8}$?
11. How many are 5 times $\frac{2}{5}$? $\frac{5}{6}$? $\frac{6}{11}$? $\frac{11}{12}$? $\frac{12}{13}$?
12. How many are 10 times $\frac{1}{2}$? $\frac{2}{3}$? $\frac{3}{4}$? $\frac{4}{5}$? $\frac{5}{6}$? $\frac{6}{7}$?

13. If a man travel $\frac{3}{5}$ of a mile in one hour, how far would he travel in 2 hours? In 5 hours? In 6 hours? In 7 hours? In 8 hours? In 9 hours? In 12 hours?

14. How many are 4 times $\frac{3}{5}$? 5 times $\frac{3}{5}$? 6 times $\frac{3}{5}$? 7 times $\frac{3}{5}$? 8 times $\frac{3}{5}$? 9 times $\frac{3}{5}$? 12 times $\frac{3}{5}$?

15. Gave $\frac{5}{8}$ of a dollar for a bushel of pears; what cost 3 bushels? 4 bushels? 6 bushels? 7 bushels? 8 bushels? 9 bushels? 12 bushels?

16. Ralph paid $\frac{1}{8}$ of a dollar for a pint of cherries; what cost 2 pints? 3 pints? 4 pints? 5 pints? 7 pints? 12 pints? 13 pints? 14 pints? 15 pints?

17. John Jones informs me, that his family consumes $\frac{3}{4}$ of a barrel of flour in one week; how much would they consume in 2 weeks? In 4 weeks? In 5 weeks? In 6 weeks? In 7 weeks? In 8 weeks? In 9 weeks? In 11 weeks? In 12 weeks? In 20 weeks?

18. Gave $\frac{1}{16}$ of a dollar for a peck of apples; what cost 2 pecks? 3 pecks? 4 pecks? 5 pecks? 6 pecks? 7 pecks? 8 pecks? 12 pecks? 15 pecks? 16 pecks?

19. Gave $\frac{7}{16}$ of a dollar for a bushel of cherries; what cost 3 bushels? 5 bushels? 7 bushels? 8 bushels? 12 bushels? 15 bushels? 20 bushels? 30 bushels?

20. Sold J. Pearson $\frac{3}{11}$ of a bushel of parsnips for one shilling; how many should he receive for 5 shillings? For 6 shillings? For 7 shillings? For 11 shillings?

21. A teacher gave $\frac{10}{8}$ of a dollar for 1 dozen of Mental Arithmetics; what should he give for 2 dozen? For 3 dozen? For 4 dozen? For $\frac{1}{2}$ of a dozen? For 6 dozen?

r; that is, 2 dollars and 2 thirds of
)llars.

2. What would 5 barrels cost at $1\frac{1}{3}$ dc
)l? Ans. 5 dollars and 5 thirds of a
ıirds of a dollar are 1 dollar and 2 thir
$= 1\frac{2}{3}$. And 5 dollars and $1\frac{2}{3}$ dollars ar

3. If a barrel of flour cost $5\frac{3}{8}$ dollar
arrels? 3 barrels? 4 barrels? 5 barrels
barrels? 7 barrels? 8 barrels? 9 barr

4. How many are 6 times $1\frac{1}{3}$? $3\frac{1}{2}$?
$\frac{3}{7}$? $5\frac{1}{8}$? $6\frac{3}{4}$? $8\frac{1}{3}$? $8\frac{3}{7}$? $8\frac{4}{5}$? $7\frac{1}{2}$? $8\frac{1}{9}$
$1\frac{3}{7}$?

5. How many are 7 times $2\frac{3}{4}$? $3\frac{2}{3}$? 4
$\frac{3}{11}$? $8\frac{7}{8}$? $9\frac{1}{2}$? $11\frac{1}{4}$? $4\frac{3}{7}$? $5\frac{3}{11}$? $6\frac{1}{7}$? 4

6. How many are 8 times $1\frac{7}{8}$? $2\frac{3}{4}$? 3
$\frac{4}{9}$? $7\frac{1}{7}$? $3\frac{3}{7}$? $4\frac{1}{3}$? $6\frac{3}{7}$? $8\frac{3}{11}$? $7\frac{1}{3}$? $6\frac{3}{11}$

7. How many are 9 times $1\frac{1}{4}$? $2\frac{4}{5}$? 3
$\frac{1}{10}$? $10\frac{1}{3}$? $11\frac{1}{4}$? $6\frac{3}{7}$? $4\frac{2}{3}$? $7\frac{1}{9}$? $7\frac{1}{4}$?
$\frac{7}{8}$?

8. Bought a peck of quinces for 6
ost 2 pecks? What cost 3 pecks? 5 pe

what part of the orange did each girl receive? Ans. $\frac{1}{20}$?

Illustration. If an orange be divided into 5 equal parts, one of these parts is a fifth; and, if each of these fifths be divided into 4 other equal parts, the orange will then be divided into 20 equal parts, and one of these parts will be $\frac{1}{20}$ of the orange. Hence, each girl will receive $\frac{1}{20}$ of the orange.

2. What is $\frac{1}{3}$ of $\frac{1}{2}$? $\frac{1}{4}$ of $\frac{1}{3}$? $\frac{1}{6}$ of $\frac{1}{7}$? $\frac{1}{8}$ of $\frac{1}{9}$? $\frac{1}{2}$ of $\frac{1}{4}$?

3. What is $\frac{1}{5}$ of $\frac{1}{3}$? $\frac{1}{8}$ of $\frac{1}{3}$? $\frac{1}{7}$ of $\frac{1}{8}$? $\frac{1}{9}$ of $\frac{1}{4}$? $\frac{1}{4}$ of $\frac{1}{8}$? $\frac{1}{6}$ of $\frac{1}{9}$? $\frac{1}{7}$ of $\frac{1}{2}$? $\frac{1}{7}$ of $\frac{1}{11}$? $\frac{1}{6}$ of $\frac{1}{7}$? $\frac{1}{5}$ of $\frac{1}{4}$? $\frac{1}{7}$ of $\frac{1}{7}$? $\frac{1}{2}$ of $\frac{1}{10}$?

4. What is $\frac{1}{2}$ of $\frac{1}{5}$? $\frac{1}{2}$ of $\frac{1}{6}$? $\frac{1}{3}$ of $\frac{1}{7}$? $\frac{1}{3}$ of $\frac{1}{9}$? $\frac{1}{3}$ of $\frac{1}{4}$? $\frac{1}{4}$ of $\frac{1}{8}$? $\frac{1}{3}$ of $\frac{1}{3}$? $\frac{1}{4}$ of $\frac{1}{4}$? $\frac{1}{5}$ of $\frac{1}{4}$? $\frac{1}{7}$ of $\frac{1}{2}$? $\frac{1}{6}$ of $\frac{1}{7}$? $\frac{1}{9}$ of $\frac{1}{9}$?

5. A gentleman owned $\frac{7}{11}$ of an acre of land, and he gave $\frac{4}{5}$ of it to his oldest son; what part of an acre did his son receive? Ans. $\frac{28}{55}$ of an acre.

Illustration. If an acre be divided into 11 equal parts, one of these parts is $\frac{1}{11}$ of an acre. Again, if one of these elevenths be divided into 5 equal parts, one of these parts would be $\frac{1}{55}$ of an acre. And, if $\frac{1}{5}$ of $\frac{1}{11}$ be $\frac{1}{55}$, it is evident that $\frac{1}{5}$ of $\frac{7}{11}$ will be 7 times as much; and 7 times $\frac{1}{55}$ are $\frac{7}{55}$; and, if $\frac{1}{5}$ of $\frac{7}{11}$ be $\frac{7}{55}$, 4 fifths will be 4 times as much; and 4 times $\frac{7}{55}$ are $\frac{28}{55} = \frac{7}{11}$. His son will therefore have $\frac{28}{55}$ of an acre.

6. What is $\frac{2}{3}$ of $\frac{1}{2}$? $\frac{2}{3}$ of $\frac{7}{8}$? $\frac{3}{7}$ of $\frac{1}{5}$? $\frac{3}{8}$ of $\frac{5}{6}$? $\frac{4}{9}$ of $\frac{3}{7}$?

7. What is $\frac{3}{4}$ of $\frac{5}{6}$? $\frac{7}{8}$ of $\frac{9}{10}$? $\frac{2}{5}$ of $\frac{3}{4}$? $\frac{7}{8}$ of $\frac{3}{4}$? $\frac{6}{7}$ of $\frac{2}{5}$?

8. What is $\frac{7}{11}$ of $\frac{1}{5}$? $\frac{8}{9}$ of $\frac{1}{2}$? $\frac{3}{5}$ of $\frac{1}{7}$? $\frac{4}{7}$ of $\frac{7}{8}$? $\frac{8}{9}$ of $\frac{2}{7}$?

9. John has a quarter of a dollar, and he gives one quarter of it to James; what part of the dollar does *James* receive, and what part does John retain?

1. John Jones distributed $\frac{3}{4}$ of a bar
ually among 5 poor persons; what part
l each receive? Ans. $\frac{3}{20}$ of a barrel.

Illustration. If $\frac{1}{4}$ of a barrel be divi
o 5 parts, one of these parts is $\frac{1}{20}$, and
ll receive $\frac{1}{20}$ of a barrel; but as there
rrel, each person received 3 times as r
ies $\frac{1}{20}$ are $\frac{3}{20}$. Therefore each poor p
ceive $\frac{3}{20}$ of a barrel of flour.

2. Divided $\frac{5}{9}$ of a dollar equally amo
at part of a dollar did each boy receive
3. Mr. Wilcox distributed among 8
ithmeticians $\frac{3}{11}$ of a bushel of plums; w
bushel did each receive?

4. What part of 9 is $\frac{3}{4}$? Is $\frac{4}{5}$? Is $\frac{5}{6}$?
5. What part of 11 is $\frac{2}{7}$? Is $\frac{1}{2}$? Is $\frac{2}{5}$
6. What part of 5 is $\frac{3}{10}$? Is $\frac{4}{5}$? Is $\frac{3}{7}$
7. What part of 7 is $\frac{2}{5}$? Is $\frac{4}{5}$? Is $\frac{3}{7}$?
8. What part of 8 is $\frac{2}{7}$? Is $\frac{3}{7}$? Is $\frac{4}{9}$?
9. What part of 3 is $\frac{2}{11}$? Is $\frac{4}{9}$? Is $\frac{7}{8}$
10. What part of 1 is $\frac{1}{2}$? Is $\frac{1}{3}$? Is $\frac{2}{3}$
11. What part of 6 is $\frac{1}{4}$? Is $\frac{1}{3}$? Is $\frac{3}{4}$
12. What part of 2 is $\frac{3}{7}$? Is $\frac{7}{3}$? Is 1